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ABSTRACT

In order to provide students training to teach handicapped learners with practice in acquiring and utilizing information about individual pupils in classroom situations, a guided design approach was implemented in a course on decision making that covered the major assessment techniques. A modified guided design book was written for the course which began by describing the method and providing a sample problem. Problems related to developing and using non-standardized assessment in the special education classroom were then presented together with instructions for their use and feedback. Basic information about assessment that was not available in convenient sources and the rationale for decisions reached were incorporated in the feedback. Groups of three to five students worked on the problems for eight 2-hour classes and then developed an assessment device similar to the one used in the problem by following the major steps of decision making. Student opinions of the effectiveness of guided design and their attitudes toward the method were assessed via four rating scales and an open-ended item. The results of this assessment reflected a generally positive response; criticisms centered around the length of time needed to work through the problems and the need for greater clarity in the instruction. The elaborated feedback section for one of the problems is included. (DJR)

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Use of Guided Design in Teaching Educational Assessment Skills

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One important distinction between the professional and non-professional worker lies in the responsibility for making critical decisions. This requirement for decision-making is clear in practically all professional fields, such as medicine, engineering, law, etc. The need to make decisions is particularly a part of the teaching profession. The teacher, who is the "on line" professional, makes literally hundreds of decisions each day in the classroom. A great deal of decision-making takes place in planning how the classroom should be arranged, what specific subject matter will be taught, what learning resources will be used, and how each lesson will be put together and conducted. Once instructional planning is completed, decision-making continues throughout the actual presentation of lessons. New decisions must be made on the "firing line." Should Billy Billings, who is whispering quietly, be called to attention? Should Suzy Schwartz be asked to explain her partially correct answer or should another student be called? Should the class discussion be allowed to follow an interesting tangent, or should talk be redirected to the major topic of the lesson? Perhaps only one other professional makes more decisions - the air traffic controller at a busy airport. Yet teachers generally receive little, if any, direct training in how to make sound decisions.

Beginning teachers typically are taught courses in educational foundations - philosophical, psychological, and social - and then classes in how to organize and present lessons are taken. In the university classroom, student teachers may demonstrate that they have learned the major principles and skills to teach effectively. However, when the student teacher's planned lesson in the school lacks a clear objective, starts with a statement like, "Today I want you to turn to page 154," and generally fails to relate the content of the lesson to the thinking and skill levels of the pupils, the dismayed university supervisor may wonder whether the student teacher has, indeed, learned anything in his or her teacher education courses. What has happened, of course, is that the teacher in training has not transferred classroom knowledge to planning and making decisions about how to teach a unique class of live kids. This lack of transfer should not be too surprising, considering that the principles to be applied were probably not learned in the context of preparing to teach a lesson and a method of making decisions about instruction was not practiced. If beginning teachers are going to be able to apply their coursework to the classroom, the teacher education program should include instruction that actively involves them in making decisions about instruction that will take place in specific classrooms.

In the present study, the teachers being trained were pursuing a credential for teaching handicapped learners. Special education teachers, probably even more than regular teachers, use information about individual pupils when deciding what and how to teach. Thus, their professional training involves more work in student assessment than that of regular classroom teachers. Before lessons are prepared, each pupil's educational needs are to be assessed. Assessment implies that at least several types of decisions should be made. The teacher must decide what questions need to be answered,

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Daniel W. Stuempfig

how to design assessment to obtain those answers, and what the results of the assessment mean for the design of the educational intervention.

The course in which I attempted to teach decision-making was one in which the students primarily were to learn to construct and use informal, teacher-made assessment tools. For about 6 to 7 years I taught this course in a traditional lecture-discussion format. Students left the course being able to construct and administer a variety of assessment techniques, but they were not proficient in tailoring assessment to respond to the unanswered questions about pupils' behaviors and needs. In other words, they did not know how to make decisions about how to design and use assessment tools effectively.

Methodology

In order to help remedy the above difficulty students experienced in applying their knowledge of assessment, I implemented a guided design approach in teaching the major assessment techniques. As most of you already know, in the guided design approach, which was developed by Charles Wales and Robert Stager, learners are guided in making decisions about simulated problem situations. They must not only acquire and use knowledge in designing solutions, but they also are to follow a sequence of carefully designed steps in reaching their decisions. Thus, students learn the content of instruction in a meaningful context and acquire both a way to think about problems and a method for reaching decisions. To refresh your memory of the major steps in guided design, you may recall that basically a problem situation is described. Then the learner is lead from identification of the problem to construction of a solution and an evaluation of it.

I chose to use guided design because my students needed to realize that assessment procedures are not cookbook applications of prepared instruments but that they are a response to a series of decisions one has made about the problems assumed or seen in the handicapped learner. Repeated, guided practice in making these decisions is required. In guided design, the students not only learn about the assessment decisions, but they <u>become</u> decision-makers themselves.

In my particular application, a modified type of guided design book was written. Following the normal format, I wrote out instructions and feedback for each of the decision-making steps in the guided design. However, since most of the basic information about assessment that I wanted to be accessible to the students was not available in convenient sources such as texts, I incorporated it into the content of the guided design book itself. This was usually accomplished by elaborating relatively extensively in the feedback sections on the rationale for decisions that were reached. This form of elaborated feedback is illustrated in the five pages attached to the back of this paper. For instance, in this particular section of the guided design, a type of observation tool that was developed is used in recording a sample of a handicapped learner's behavior. The feedback section then provides a commentary on the features of the observation record that can be seen in the example. In this way, content that might ordinarily be found in other resource material was part of guided design and was related to the results of the decision-making that had taken place.

The book contained four major guided design problems. The first part of the book introduced students to guided design by briefly describing the method

and providing a sample guided design problem from Wales and Stager's 1977 publication, Guided Design. In the remainder of the book problems related to developing and using non-standardized assessment in the special education classroom were presented. The same basic setting formed the context for the guided design problems. In the setting two (fictitious) student teachers, Amy and Joel, are assigned to work with a master teacher who guides and assists them as they attempt to plan to assess the educational needs of a new student in class, Art. "Art" is a fifth-grade student whose problem behavior is based upon the school history of an actual special education student. For the first problem, Joel and Amy must decide upon a basic rationale and approach to assessment in special education. Later, they have to solve problems involved in designing assessment tools that will help them answer questions about Art's educational needs. Finally, for each tool used, the student teachers also decide how to make effective use of the information obtained to help Art make progress in school. By the time the students in the class completed the guided design book, they worked through the decision-making process from six to ten times and applied new knowledge about assessment in solving problems that special education teachers face daily.

The mechanics of the group work on the guided designs followed standard procedures. Groups of three to five students worked on the problems in the guided design book for eight 2-hour class sessions. Although a leader was designated to tell the instructor the decisions reached by the group at each step, two or three times during each class the instructor joined the groups to encourage or assist them in their decision-making. Each prepared guided design was followed by an activity in which the student groups developed a similar assessment device by following the major steps in decision-making. For example, after one guided design resulted in the development of a narrative observation instrument, students were directed to follow similar steps in designing the rationale and actual format that would be useful for recording critical incidents in Art's (or any pupil's) school day. Guided design work performed in class was accompanied by a parallel homework assignment that was to be completed independently during the following week. Assignments generally required students to carry out a minor assessment using the tools that had been developed in class.

Results and Discussion

Reaction to the above use of guided design was obtained from 30 students enrolled in four classes from summer 1985 to summer 1986. Their judgment of the effectiveness of guided design and their affect toward it were assessed by four rating scales and an open-ended item (see Tables 1 and 2). The results of this assessment reflected a generally positive response. Two-thirds agreed that guided design was a more effective method of learning than traditional lecture/discussion, but 20% were dissatisfied with it. Even more students (70%) indicated that guided design should be used in other education courses. However, only 40% believed they would use the guided design procedure when making educational decisions in their own classrooms, and only 37% liked solving problems in groups. The most frequent positive comments on the open-ended item revealed that students appreciated the variety in method of learning provided through guided design and the use of an applied context for learning material. Criticisms centered around the length of time needed to work through guided design problems and the need for greater clarity in the instruction.

Table 1

Student Ratings of Guided Design Instruction

1. For me, the use of guided design was more effective than traditional lecture/discussion methods for learning the material in this class.

	Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)	No Response (NR)
n =	6	14	4	4	2	0
% =	20	47	13	13	7	0

2. I find that working in groups on problems is a learning style compatible with my desired mode of learning.

	SA	A	N	D	SD	NR
n =	4	7	9	4	5	1
% =	13	23	30	13	17	3

3. I would like to see guided design be used in other professional training courses in education.

	SA	A	N	D	SD	NR
n =	8	13	4	4	0	1
% =	27	43	13	13	0	3

4. I believe I will follow the simulated decision-making process practiced in guided design when making decisions in the field.

	SA	A	N	D	SD	NR
n =	2	10	9	7	2	0
% =	7	33	30	23	7	0

Table 2

Student Responses to Open-ended Evaluation Item

Open-ended response item:

What were specific strengths you perceived in learning with the guided design materials? What did you like about the guided design approach?

approach was different and interesting	n = 14
information was presented in an applied context	n = 11
liked getting ideas from others in group	n = 5
approach encouraged thinking and flow of ideas	n = 5
miscellaneous	n = 7

What were specific criticisms you had about learning with the guided design materials? What did you dislike about the guided design approach?

process took too long	n = 11
instructions were confusing, not sure what we were to do	n = 8
some group members try to dominate	n = 5
miscellaneous	n = 3

Whether guided design was actually effective in teaching students to make appropriate assessment decisions was inferred from the quality of the students' work in carrying out a field assignment in assessment. Over all, grades given to the papers were noticeably higher than those obtained by previous classes on a similar assignment. Grades rose from an average of 86% ("B") to 91%, an "A-." Thus, the outcome of the use of guided design was encouraging.

From my own perspective, I regard the use of guided design reported in this study to be a qualified success. Although my interpretation of student reaction is by no means free of contamination of my investment of time and energy, I believe I can offer some reasonably accurate statements describing student response to learning in a non-conventional manner. First, I noted that the specific composition of the student work groups is an important factor in how successfully students will learn from guided designs. Groups may contain persons who dominate decisions, who tend to get the group off task, who have difficulty understanding other group decisions, or who are generally abrasive. Any of these types of people have a negative effect on learning and the overall quality of the guided design experience. This effect of the group on reactions to guided design was illustrated by the finding that all who indicated a lack of satisfaction with this way of learning also marked a dislike for group work. On the other hand, the positive effects of a supportive, facilitating group are obvious.

Another major influence on student reaction to guided design was the quality and clarity of the written material. Instructions were at times too vague, and this frustrated students when their decisions were not apparently related to the feedback sections in the design materials. Some of the confusion experienced by students could also be a result of their preconceived notions about how decisions should be made. There was a persistent tendency to try to develop specific solutions to problems before problems were clearly identified or goals were established. Once the guided design moved to the stage of developing solutions, students were usually able to proceed with little confusion over the tasks they were to perform in the decision-making steps.

A significant number of students were displeased with the amount of time needed to work through steps in the problems and with time required to work in groups. The steps in the present guided design were also probably more time-consuming than normal because textbook content was included within extended feedback (and to a lesser extent) and instruction sections. Thus, for some students, a "streamlined" guided design probably would have been better received. For example, only the most essential information and critical decision-making steps would be included, and provision for independent work on the problem would be made.

Finally, I was disappointed that only 40% indicated they planned to use the steps in guided design to make decisions in their own classrooms. From informal interviews I discovered that the main reason so few students were anxious to use the decision-making steps was because they believed a procedure as time-consuming as that worked in the classroom could not help them solve "on the spot" problems that arise while teaching. Students need to understand that those are carefully considered decisions that are made in planning instruction and that the deliberate decision-making process in guided design is perhaps better used here than in the split-second decisions a teacher makes on one's feet. Observing and interviewing students after they have been on the job

could help answer the question of whether they use the decision-making strategy in their profession.

In all, work on the present project has been a professionally rewarding experience for me. Thus, I anticipate continued development and application of guided design to the regular teacher education program.

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EXCERPT FROM GUIDED DESIGN PROJECT

(Example of elaborated feedback)

BEHAVIORAL CATEGORY CODING SYSTEM OBSERVATION

Identifying Information:

Learner: Arthur Adams Sex: M Grade: 4

Observer: Joel Jacobs Date: 5/10/85 Time: from 10:50 to 11:00

Class and activity: Special day class--individualized seat work

Setting: Ten students are seated at individual desks. Twelve desks are arranged in three rows of four desks, but two students are absent. At least four feet of open space exists between all the desks. Art sits in the front of the middle row, facing a chalkboard. Ms. Bell is in the office while the aide supervises individuals' work as they request it. Students have been working for 20 minutes and will get a short recess at 11:05. Each person is to work quietly in a work folder.

Behavioral Categories and Codes:

Area of behavior: Off task behaviors

Categories and codes:

On task

OT On task behavior, including work at seat, lesson-related talk, or directed movement around the room

Off task

Acts toward or with students; at seat

ST Talking; 1 = initiating, 2 = responding

SH Touching with hand or arm, including hitting, pulling, pushing, etc.

SL Touching with leg, including kicking, shoving, etc.

Acts toward or with teacher aide; at seat

TT Talking; 1 = initiating, 2 = responding

Acts by himself; at seat

AV Vocalizing; humming or mumbling quietly with no known target

AM Manipulating objects, including pencil, book, clothing, etc.

AL Looking around, gazing

Out of seat

OS Walking or crawling out of seat without being directed by teacher/aide

Behavioral Observation Grid:

Grid

Notes & Comments

time	seconds 5	10	15	20	25	30	35	40	45	50	55	60	
10:50	OT	OT	OT	OT	OT	AL	AL	AM	AM	AM	AM	AL	
10:51	AM	AM	AM	AL	ST1	ST1	ST2	ST1	ST1	OS	OS	AV	Hit Jim once with fist while OS.
10:52	TT2	TT2	TT1	TT1	TT2	TT2	OT	OT	OT	OT	OT	OT	Aide intervenes.
10:53	OT	OT	OT	OT	ST1	ST2	ST1	ST1	AL	ST1	ST1	ST1	Aide says, "Get back to work."
10:54	OT	OT	OT	OT	ST1	OT	OT	AM	AM	AM	AM	AM	
10:55	AM	AL	AL	AV	AV	AV	AL	AL	AV	AV	ST2	ST2	
10:56	TT1	TT2	OT	OT	AM	AM	OT	AM	AM	AM	AL	AL	
10:57	AM	AM	ST1	ST1	ST1	ST1	OT	OT	OT	OT	OT	AM	No response from student.
10:58	AM	AL	AV	AV	AV	AM	AM	AM	TT2	OT	OT	OT	Aide motioned for Art to get busy.
10:59	OT	AM	AM	AV	AM	AM	AM	AM	AM	AM	AM	AM	Rolling pencil down front of folder.

Quantitative Summary:

Category	Percentage of Time
On task	
OT	27.5
Off task	
ST1	12.5
ST2	3.3
SH	0.0
SL	0.0
TT1	2.5
TT2	5.0
AV	8.3

AM	29.2
AL	10.0
OS	1.7

Comments or Summary:

While a great deal of physical interaction with peers was expected, during this observation Art was either on task or engaged in solitary activity 75 percent of the time. The one physical interaction took place when Art was briefly out of seat. The 4-foot spacing of desks may discourage contact.

No on-task segment lasted longer than one minute, and three on task segments occurred after the aide directed Art to return to work. The work is obviously not engaging his attention.

Talking was generally initiated with peers, but his talk to the aide showed twice as much responding as initiating. Responding seemed to be a questioning of authority, which might not be the case when Ms. Bell is present. Both initiating talk with peers and "sassing" the aide could be attention-getting devices, and he may be getting the attention he is seeking. Perhaps ignoring off task talking should be considered (note return to task after ignoring during 10:57).

Feedback H

The student teachers, Amy and Joel, poured over the observation they had made. They then compared it against the five essential qualities they had specified for the observation.

Joel explained that the observation was easy to identify and interpret because of several features in the format. For one, the "Identifying Information" was at the top of the front page. Then, there were a couple of places where notes and comments were called for. Along the side of the grid very specific notes on behaviors or context could be added, and the "Summary or Comments" section invited general impressions and immediate reactions and questions. Also, the "Setting" and "Quantitative Summary" would be used in interpreting the observed behavior.

The evidence for the presence of clear behavioral categories was also pointed out by Joel. He referred to the fact that observable verbs were used in defining the categories, and examples of behavior considered to be in the category were included in most of the descriptions.

The categories were also designed to be both distinct, in order to avoid the possibility of having a behavior fall into more than one category, and comprehensive, in order to be inclusive of all behaviors observed. This quality was achieved for the most part since Art had to be either on task or off task, and when he was off task he had to be either in his seat or out of his seat. In a few instances, however, the category to be marked was not clear. This problem arose primarily when Art was verbalizing while conducting behaviors that fit into other categories. The appropriate category to be recorded when Art was listening to a verbal response of another student or the aide also was not clear.

Amy elaborated upon the convenience of the behavior codes. She stated that the use of two-letter codes allowed each code to be associated with the key words in the category description and make recall of the codes relatively easy. Since there were only two letters to record, and one number in case talking was recorded, about one second was all the time needed to mark the code on paper.

Organization in the actual record of the behavioral codes was achieved satisfactorily in Amy and Joel's judgment. The grid for marking codes provided for a record of not only what behavior happened but also when and for how long it occurred. An interval of five seconds seemed to be about a maximum length to allow for only one category of behavior to occur during an interval. At the same time it was long enough to allow for careful observation, a decision about the category to record, and the marking on the grid. The consistent five-second interval was also easy to monitor on the stop watch. Thus, the format of the marking system provided the structure necessary for consistency in recording observed categories of behavior.

Amy explained that the quantitative summary of observed behaviors was obtained easily by presenting the total number of observations

recorded in each category in terms of percentage scores. A tally of the number of times each code was marked was simply divided by the number of intervals in which behavior categories were recorded to obtain the percentage figure. The use of percentages in summarizing the observation also has the advantages of being readily understood and allowing comparisons of the frequency of behaviors recorded during observation periods of different lengths.

Joel and Amy concluded that their observation contained the major qualities they had hoped it would possess. Now they turned their attention to judging the extent to which the observation, as a whole, might be of use in assessing Art's problem behavior. They both recognized that the potential practical usefulness of the observation had already been addressed in the "Comments or Summary" section. While Art did not physically interact with anyone from his seat (though he did rise out of his seat and hit another student), presumably because of the four-foot spacing of the desks, he was disruptive because of his talking, which occurred over 23 percent of the time.

Amy pointed out that the record of behaviors seemed to underscore Art's striving for teacher attention. As noted earlier, he tended to initiate talk with peers but to respond to the adult. When peer talk was initiated, it was followed in two of three cases by adult talk directed to Art. In the one case in which the peer and the aide ignored the talk, he returned to task after 20 seconds.

The fact that Art spent no more than 50 seconds on task at any one time was reiterated by Joel. Joel was also struck by the finding that almost half the time Art was engaged in off task behaviors that were not particularly disruptive. To Joel this suggested that Art also directs his attention to behaviors that do not involve "bugging" others. Perhaps the tasks Art is being asked to complete need to be examined. The content and format of the materials and the type of reinforcers used could all contribute to an apparent boredom with his schoolwork.

A final point made about the usefulness of this observation was that conclusions must be tentative. The behavior sample must be compared to other records of performance obtained at other times and in different settings. Nevertheless, careful examination and comparisons of a series of observations can provide information that may lead to effective intervention strategies by the teacher for the student.

Instruction I--Recommendations

When Joel and Amy presented their self-evaluation of their non-narrative observation to Ms. Bell, she was delighted that they not only had done a careful job of evaluating but they also had begun to internalize the decision-making process and carried out the evaluation on their own. Now, however, she asked them to consider the type of non-narrative observation they produced and to recommend how it might be most usefully employed. They were also urged to communicate any particular difficulties others might need to be aware of in the development and use of this type of observation.